SOME LIGHT

UPON THE

EGYPTIAN METHOD OF CHRONOLOGY.

A great deal of mental effort has been expended in the attempt to explain the numbers used by the Egyptians, covering the generations, dynasties, cycles, and years, embracing in round numbers their system of chronology. The original data to work on are found to be few, very much confused, and insufficient. It becoming admitted that a greater part of their so-called chronology is fictitious, that part has been sought after having the end of withdrawing some reliable fact of real chronology, as a basis from which, as a beginning point, the real being separated from the anterior and mythological, a condition of chronology may be arrived at comparable with the historical events of other nations.

For this purpose the record of Egyptian history esteemed of greatest value is to be found in the writings of Syncellus, quoting from and commenting on the Egyptian historian Manetho. This has been made use of by Lepsius, Bunsen, and many others, and also by John von Gumpach, in a masterly article, "The Historical Antiquity of the People of Egypt," to fasten real Egyptian chronology as comparable with and bounded by their so-called Sothic cycles. Commenting on this passage from Syncellus, Gumpach finds the year B. C. 2785 as marking the period of the reign of Menes, the first king of Egypt: not that it points to the precise year of his accession, but to that point in his reign recognized by himself, and to be recognized for all time to come, as the Sothic period, which was marked by the rising of the dog-star heliacally with the sun in Egypt. Herr Gumpach founds his discovery upon an alleged one of Dr. Brugsch, the celebrated Egyptologist, viz., as of the hieroglyphic designations of the three tetramenies, or seasons of the year, differing from those theretofore determined—as to which he does great injustice to Dr. Gustav Seyffarth, for the latter, in 1839, gave precisely the same meanings to those tetramenies that Brugsch did (claiming an original dis-

covery) in 1857; for Seyffarth, giving the precisely same hieroglyphs with Brugsch, says: "(Hieroglyph) irrigationem Nili, a radice (Coptic letters), irrigare, potare, bibere; ergo autumnum. (Hieroglyph) hiemem, ab (Copic letters), casus solis vel finis æstatis. (Hieroglyph) æstatem, a radice (Coptic letters) (æstas)." Even further; while Gumpach claims to have discovered that the month Thot, beginning the tetrameny of the irrigation of the Nile, marked the period on the zodiac as the 20th July, Julian calendar, which in his estimation is of incalculable value as giving a fixed point for determination of chronology, Seyffarth, in fastening the order of the months on the circle of the zodiac, actually places the month Thot, the beginning month of autumn, and of the tetrameny of the irrigation of the Nile, to run from the middle of July, Julian calendar, also, viz., the tetrameny of irrigation of the Nile embracing the autumnal third of the year in the months Thot, Paopi, Athyr, and Choiac, or July, August, September, and October, running into November, So, also, Seyffarth places the year 2783 B. C. as that in which Menes "*moves*" to Egypt. (So much in justice to Dr. Seyffarth, as to whose writings in this particular, Gumpach must have been in ignorance, as it is most charitable to think that Brugsch was also.)

But as to the matter in hand, while the most of the time embraced in Egyptian chronology was, beyond all doubt, fictitious, as applying to known or historical events, nevertheless it can not be supposed that the surpluses were captiously taken, but to the contrary it must be, that among a people so advanced in the higher realms of wisdom, they had reference to some occult system in nature having to do with numbers, their relations to geometrical shapes, and their properties of astronomical calculations, as is the opinion of the author; or, at any rate, to something which was with them a recognized symmetrical system, the key to which has been lost, as is the quite universal opinion among commentators.

Agreeably with the opinion of the author, the numbers set forth by Syncellus in the paragraph alluded to, have relation back beyond the true chronology which he deduces from them, to two forms, or to two quadrature values of the circle, viz:

(1) 6561 : 20612,
(2) 113 : 355,

where the second is a modified form of the first.

The passage from Syncellus (see original in Gumpach's article and elsewhere) reads as folllows:

"For Manetho, the most illustrious among the Egyptians, writing concerning their 30 dynasties, as to these taking exceptions (or occasion), differs by a great deal as to their periods of time. . . . For of the

113 families, or generations, in 30 dynasties, described in three books, the time, extended over all, 3555 years, commenced in the year of the world 1586, and thence extended to the year of the world 5147; truly, indeed, before Alexander of Macedon, lord of the world, somewhere about 15 years. From these, then, any one separating the 656 before the flood from the 2242 filled in from Adam even to the flood, as false and non-existing, and (or also) the 534 from the flood even to the building of the tower, the confusion of tongues, and the dispersion of the nations, he will understand, manifestly, the beginning of the Egyptian kingdom from Mistraim, the first ruler over Egypt (and who is called Menes by Manetho), from the year 2776 from Adam even to Nectabenus, the last king of Egypt; so as to be wholly 2365 years from Mistraim even to Nectabenus himself; and so there will appear, as foretold, as belonging to the world 5147 years: before the foundation of the world power of Alexander, nigh on to 15 years."

There is a purposed confusion in this statement, calling for a mental consideration or contemplation of the relations of these numbers. Gumpach shows that the data are purposed as stated, and resolves them so as to adduce a true chronological result; but had this result been the only idea held in view, it could have been stated simply, involving no confusion. Therefore, perhaps, a purposed design of adapting these numbers to a scheme or system beyond the simple setting forth of chronology would involve an apparent confusion where the statements are held as having no other object in view than simple chronology.

As to use of these numbers among themselves:

(1) Take the year of the world	2242
Deduct	656
Remainder,	1586

and the remainder gives the year of the world commencing the period of 3555 years, covering the space indicated above; for Syncellus says, "from the year of the world 1586."

To this	1586
Add	3555
Sum,	5141

where we see that by Syncellus' own statement the year of the world 5147 needs 6 years more than he has numbered.

Again,

(2) Take the year of the world	2242
Add the other period mentioned,	534
Sum,	2776

and we have the year of the world 2776 spoken of by Syncellus.

Add to this	2776
The next number given,	2365
Sum,	5141

and again we find the number 6 wanting to make up the number 5147 of the years of the world.

But Syncellus, as to this 5141, enumerates it as 5147 years, showing in so simple a matter a purposed error as to the number 6 in the lapse of time between Mistraim and Nectabenus, which, to make his number good, should be $2365 + 6 = 2371$. The omission seems purposed as pointing to the fact that 5147 is just lacking the number 6 to make the number 5153, or the *area of a circle inscribed in a square area of* $81^2 = 6561$, *or of the number* 9 *raised to the fourth power*. This is in accordance with his figures, for $5147 + 6 = 5153$, the elemental circle number, and $5153 + 9 = 5162$, the year of the world obtained by adding the 15 years to the foundation of the world power by Alexander of Macedon, by which separation of the number 15 into $6 + 9 = 15$, the number 6 accomplishes the designed shadowing forth of 5153, that circular area as to which the number 9 denotes the base of that square of 81 (or area of 6561) inclosing it, the force of which is added to when it is further considered that 6561, taken as a diameter value, has a circumference of $5153 \times 4 = 20612$.

Taking it that this is so, and then that the author finds the form 6561 : 20612 significant of these geometrical relations, as giving (1) the origin of the British *inch*, the ancient *cubit*, and the Roman *foot;* (2) the means of restoration of the Great Pyramid, and (3) so, also, as being found with, and in connection with the form 113 : 355 (which is but a modification of it) in the Bible, cropping out everywhere, from Genesis to and through the New Testament, as a base of astronomical calculations, for measures, for calendar systems, and evidently for far more subtle and mysterious purposes,—let us look at the other numbers mentioned by Syncellus in this paragraph. Firstly, the number 113 leads off as a distinctive one (113 generations), connected with which, as a determinative, 3555 is used as a whole number to denote, as regards the immediate context, the years embraced in the duration of the 113 generations. Now the ancient Hebrew word for *year* was *shanah*, denoting the *circle of the sun*, and its value is 355, as significant of this fact; for the method was to count on a basic or inner circle 355 days as closing this circle, then at the terminus or close of this circle to rest or stop 5 days, as it were blotting them out. These five days, called *epagomenai* by the Greeks, were continued to be counted on a next outer circle of 360 days, making $355 + 5 = 360$, thus completing the count, and closing this second circle of 360. At this point another stop or rest of 5 days was made, which were still counted on and along the line of a still outer or third circle, making $355 + 5 = 360 + 5 = 365$ days, or the vague year. Thus the circle of the vague year was founded on the basic circle of 355 days, whose diameter was 113,

for the purpose of correlating solar time in days with an abstract value of relation of diameter to circumference of a circle. By parity of reasoning the 113 and 3555 in this passage of Syncellus, beyond the immediate object of the text, points to a like base in the form

113 : 355,

the 355 being further extended to 3555 (a), for the chronological purposes held in the text, and (b), still more obscurely to show another use founded on the other form of

6561 : 20612;

because, the circumference of the base of the Great Pyramid founded on this latter form (see *Source of Measures*, pages 92, 170) was 1777·777+ cubits, and $1777{\cdot}777 \times 2 = 3555{\cdot}55+$ giving the whole number 3555 continued on to 3555·55+ decimal, which shows the use of 355, then 3555, then 3555·55+, as involving these two forms. All this is in perfect harmony with the subject-matter of the text, because the Great Pyramid, in its measures, was but a stone book containing all the ancient wisdom as to the cosmos and the rolling of the years. While 355 is connected with 113, as 3555·55+, so it is also with 20612 the circumference to a diameter of 6561, because 20.612 *inches* divided by 12 equals 1.71766+ *feet*, or the *cubit* value, and the circumference of base of Great Pyramid being 1777·77+ *cubits*, and this value multiplied by 2 giving 3555·55+, thus the inter-connection is shown. Now having found in this connection the number 5153, which is area of a circle inclosed in a *square* area of 6561, and which as $5153 \times 4 = 20612$, is circumference to a diameter of 6561, we find a guide to this determination in the use of the number 656, as in the paragraph by Syncellus, being the number to be cast out of 2242 prior to the flood. It is for this reason: With the Hebrews, in their use of numbers, it was a law that for significant purposes a number used might be read backward as well as forward. For instance, the Hebrew chronology (which is evidently had in mind by Syncellus, for his 2242 years is the period determined by the seventy from the beginning to the flood, and his 656 has, in this connection, evident relation to the 1656 years from the beginning to the flood, as by the Hebrew chronology) has it that there elapsed, from the beginning to the period of the flood,

1656 years.

By their numerical rules of determination, this value, for another purpose, could be read as

6561;

which, as seen, is that square area which incloses a circular area of 5153. Now, in the text, this very number being set forth, and alluded to, for the

purpose, firstly, of guiding to a chronological result, is placed in the equivocal, or enigmatical, position of

656,

where, secondly, by the use of the number *one*, either as prefixed or appended, it could be read, either as 1656, agreeably to the Hebrew chronology (evidently pointed at in the article), or as 6561, the numerical base *upon which* chronology, among other things, was founded, more obscurely implied. All this, while purposely given as the number which, with the 2242 used by the seventy, would yield the year of the world 1586 as the proper chronological beginning of the Egyptian dynasties under Menes. Syncellus evidently wrote as to persons acquainted with the Hebrew chronology, and that of the seventy; and at the very first reading, one's attention then, as now, would be directed to the fact of omission of the number *one* in the 1656 years to the flood, just as in the other instance to the omission of the number 6, causing the mind to dwell on the fact of omission; and this to a wiser person would direct his attention to that other use of 656, such that, by appending the number *one* instead of prefixing it, the number would become 6561 and related to 5153, also indirectly with 3555 when extended to 3555·555+ decimal, as seen; so that, dismissing the *prima facie* idea of actual chronology, it would recognize use of the two values of diameter to circumference, viz:

$$6561 : 5153 \times 4 = 20612$$

with $113 : 355$,

which is but a modification of it.

So it seems thus apparent, that while these forms are shown in *Source of Measures* to underlay the first face-reading of the Bible, they also were used as a base supporting the Egyptian system of chronology. This determines the fact that the extension by the Egyptians backward from true and historical periods into an ideal system, was not intended to falsify chronology, but to attach it to and relegate it to a system of numbers, obeyed in shapes, and recognized as controlling in the natural workings of the cosmos.

The Hebrews, holding the number 355 as the base of their calendar value of the vague year of 365 days, recognized in the title of the kings of Egypt, viz.,

Pharaoh,

the same custom or usage with the Egyptians; for the Hebrew letters going to make up this number, sum up the value

355.

This number, abstractly denoting the circumference of a circle, was applied by the Hebrews in their word *shanah* (for it is the value of this

word) for the *year*, by sympathy designating the *circumference of the circle of the year*. That the Egyptians so esteemed the meaning of this title, Pharoah, as of like signification with the Hebrews, is provable from the fact that the hieroglyph of the title with them was the *solar disc or circle*, denoting the reign of the sun over his circular orbit; the initial base of the measure of which was, as above said, 355, the abstract numerical value of an elemental circumference. Paul Pierret, in the preface to his new hieroglyphic dictionary, speaking of this title, says: "Chaque prénom royal constituant une assimilation du Pharaon au soliel commence presque invariablement par le disque solaire," which seems sufficiently to establish the fact.

So, also, as confirming what has been stated, and as showing a perfect accord between the Hebrew and Egyptian use of these forms as interconnected, many instances could be given from the Bible. The following will suffice.

In 4th Genesis, it is stated of Eve that she brought forth Cain, and said, "I have measured a man, *even* Jehovah." This *man* was Cain, whose name was a verbal modification of the value of the more generalized form, "man." The Hebrew word for *man*, as here used, has the running value of

113,

the diameter to this number 355. But *man* in the context, as a word, is placed *in apposition with* the word Jehovah, the running value of which latter word, as read from right to left, are (*sic*) 565^{10}, or, as read directly, 565^{10}. The text saying "man even Jehovah" gives the equivalent numerical form:

$$113 = 565^{10};$$

and as a fact

$$113 \times 5 = 56.5 \times {}^{10}$$

produces this very number form 5651, or Jehovah, as springing from the diameter value 113, as a *special* form thereof. Truly enough, the object becomes apparent. This *man* or 113 was Cain, and the running value of this name is 115, so that we have 115 (Cain) in contrast, for some purpose, with 113 (man). In fact, this 115 is just such a modification of the form $113 - 5651$ that the number 5651, thus raised, will serve as a determination of what modification is intended on 115 to connect with the value 113. Cain as a man comes under the remoter generic term *Adam*, and the value of the word Adam is 144; and

$$115 \times 144 = 1656$$

where we have reading as we did Jehovah, 1656 with 1565, or in the reverse and directly 6561 with 5651. And thus we get the end desired. The object has been to indicate two diameter values, viz., 113 and 6561, where one

has a circumference of 355, and the other of $5153 \times 4 = 20612$, and the means adopted determine the end by the rhyme

113 to 5651
115 to 6561

and the two forms

113 to 355
6561 to $5153 \times 4 = 20612$

are indicated as connected, just as in the Egyptian use as gathered from Syncellus. But the object is even more significant. To get the *cubit* value, the circumference value 20.612, thus pointed, was passed over onto the 12 straight edges of a *cube* dividing this sum into 1.717666, which, as a fact, in terms of the British *foot*, is the value of the ancient *cubit*. The $\frac{1}{12}$ of this value is $\frac{1.717666}{12}$, or a reduction of the cubit into smaller parts or denominations; and 1.717666+ *feet* thus found as the denomination of a *cubit*, and the cubit being 20.612 inches, the division of this by 12 indicates a similar but reduced form of measure in 1.717666+ British *inches*, as an independent unit of measure. In this connection it may be observed that the value of the name Moses is 345, or 115 (Cain) $\times 3 = 345$, and by the same process as last above, it might indicate this smaller measure multiplied by 3, and 1.717666+ inches $\times 3 = 5.153$ inches, and this has the more force, inasmuch as the *ark of the covenant*, the key of the tabernacle structure, was $2\frac{1}{2}$ cubits long, or 51.53 *inches*. The abruptly thrown-in scene of Zipporah, connecting Jehovah and Moses with circumcision, or circling, has probably something to do with establishing the groundwork of these measures in that place, as it also couples the affair with the mention of Pharaoh, and the word *dami*, or bloods of the husband, which has the value of 144. (The word is *damim* in the text, but is elsewhere used as *dami*.)

These forms come out more specifically in the narratives of Abram and Isaac in the Bible (as to which see the rough calendar systems raised from them in *Source of Measures*, Appendix II). Abram and Isaac come under the generic name "*man*," which is 113, and on examination, the combined years of the lives of Abram and Isaac are $180 + 175 = 355$ years, giving the value of the word *year* in the 355, designating the circle of the sun; so thus we get the full form 113 : 355. But the value of the name Abram is 243, and making use of the form 6561 : 20612 as of a quadrature value, 243 as a factor of 6561, is diameter to a circumference of 763.4074+, which, as found in *Source of Measures*, is the standard base side of the great pyramid of Egypt. But raise a square on this diameter line of 243, inclosing this circle of 763.+, place four such squares together, and the diameter of the larger square formed will be 486; and, indeed, the circumference of the four circles will give the standard circumference of the great pyramid, and the 486 will give its standard height. 243 is a multiple of 9, and $9^2 = 81$, the side of the square whose area is 6561. Add 81 to 243 and the sum is 324, twice which is 648. Now, whereas, 243 (Abram) is a *diameter* value as seen, 648 is a *circumference* value to 20626.47001+, which, divided by 27, will give the *exact* base side of the pyramid (worked on the *standard* value of 20612) in British *feet*, having a circumference value of which the number 24 is the characteristic, which, in the Hebrew words *Garden Eden*, is found to be used as designating the value of the side of this garden, showing it to be the *equivalent* of the pyramid structure. But, further, Abram was circumcised, or circled, by taking from him the *ring* of the prepuce when he was 99 years (*sic*) old. He was 100 years (*sic*) old when Isaac was born; and Isaac was 8 days old when he also was thus circled or circumcised. As stated, the word for *year*, or *circle of the sun*, was *shanah*, having a value of 355, an abstract circumference value as shown. 100 years, or *shanahs*, or 355's, then, would give 35500 days; 99 years would give $35500 - 355 = 35145$ days as the age of Abram when he was *circled*. Eliminating the 4, and reading the Hebrew way, and the numbers show us 5153, or the area of the circle inscribed in a square area of 6561. Use the eliminated 4 thus: $5153 \times 4 = 20612$, and we have, in place of an area value, a linear circumference value of $5153 \times 4 = 20612$ to a diameter of 6561, showing the exactitude as for which circumcision was the shadowing type. This use is confirmed when the circumcision of Isaac is taken into consideration. The united ages of Abram and Isaac, or $175 + 180 = 355$, gave us, as shown, the form 355 : 113. Abram was 35145 days old when he was *circled*, and Isaac was 8 days old when he was *circled*, and their united ages, in this regard, were $35145 + 8 = 3—5153$, where, after the initial 3, we have the direct reading of the value of 5153 (or the area of the circle inscribed in a square of 6561). Making use of this 3 in division, and we have $3 \mid 5153 = 1.71766+$, or the *cubit* value. This use is confirmed as biblical, because the ark of the covenant was $2\frac{1}{2}$ *cubits* long, or 51.53 inches, and its height added to its breadth was 3 cubits, or 5.153 *feet*.

So one can thus see a common use by the Hebrews and Egyptians of these numbers as found obscured in the passage of Syncellus regarding Egyptian chronology. That the ancients found these numbers as of infinite value in interpreting the cosmos, is evident from many facts of astronomical admeasurement. One may be presented as illustrative. The *natural* measure of the year consists in the rising and setting of the sun, as it times off, or performs, its daily circuit of the heavens. By long con-

tinued observation, it has been found that the exact numerical value of the solar year, in *terms of this measure*, is

365.256374+ days.

Suppose that while this is so, this numerical admeasurement denotes also, and further, *an obedience*, or relegation back, to an abstract system of the relation of numbers to geometrical shapes, as a cosmical law, or model of construction, as thus:

36000000000
515300000
10306000
31415
365.25637415

Here are a series of circumference values, all referable back to *one* numerical value, or form of circumference to diameter, of a circle, viz:

$5^{1}53 \times 4 = 20612 : 6561$

and to *none other by possibility*; which being thus used, restores the *exact value of the solar year* as found in the terms of the rising and setting of the sun, a natural measure. And this shows, as one among a multitude of like beautiful and wonderful illustrations, that whatever may be, as a fact, the true relation of diameter to circumference of a circle, nature has chosen to establish the practical workings of her cosmical laws upon this one of

20612 : 6561

even in the face of the results of Legendre and Playfair. Not only so, but as above it is clear that the ancients, not having the fear of the resolutions of the Royal Society of London, or of the Academy of Paris, before their eyes (see *Source of Measures*, page 310), actually had the audacity to place the form

20612 : 6561

with its modification of

355 : 113

as the base of their very highest attainments in geometry, astronomy, and in their recognitions of the individuality of the Deity.

J. RALSTON SKINNER.

CINCINNATI, *December* 31, 1875.

APPENDIX.

AS TO MEASURES.

The restoration of the cubit value by Sir Isaac Newton, taken from many admeasurements from various parts of the great pyramid by Prof. Greaves, of Oxford, was 1.717 British feet. The restoration by the French savans of 1799, from a great number of measures taken from the catacombs of Osimandya, was .523524 *meter*, or $.523524 \times 39.37079 = 1.71762+$ British feet. The division of the above-mentioned circumference value of 20612 by 12 gives the numerical value 1.717666, showing the *origin of the measure*; where, *because* the division is made by 12, then indeed 20.612 must be taken as practically utilized as British inches. So, we have the British *inch* and *foot*, with the ancient *cubit* value, as coming from this abstract source. Not only so, but take the form:

$$\left.\begin{matrix}20612\\6561\end{matrix}\right\} \times \frac{16}{9} = \begin{matrix}36643.555\\11664.\end{matrix}$$

In 36643.555+ we have the standard circumference, in *inches*, of the *base of the great pyramid*, and what is more, in the *diameter* of this last value, or in 11664, we find the reproduction of the value of the

Foot of the Roman Nation,

which, by the very best restorations, has been found to be

11.664 British *inches*;

showing that while the British *inch*, and *foot*, and ancient *cubit* were taken from the circumference value 20612, the Romans established their measure from the *diameter* value of this circumference (see *Great Pyramid*, by Rev. John Taylor, as for restored value of Roman foot, page 25). The British *foot* is evidently an old Phenician or Hebrew measure, derived from the same elements, and was taken as a circumference value of

12 : 3.8197166+,

where 381.971+ is in British feet, the *exact* half base side of the great pyramid, derived as seen above, under Abram and Isaac, and as to be found in *Source of Measures*, §§ 51, 54. By equivalence with the pyramid structure, 12, as inches or feet (in scale)$_{\frac{1}{4}}$ was fastened as half the length of the side of the Garden of Eden, which, as a square, represented the base of the great pyramid. So it was utilized as $12 \times 12 = 144 =$ Adam, and also as the base or nucleus of the encampment, which answered also the purpose of the Zodiac, or ring of life, or Paradise.

J. R. S.

CINCINNATI, *January* 1, 1876.